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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,002	08/18/2006	Mordekhai Velger	BKE0007US	5153
23413 7590 12/06/2010 CANTOR COLBURN LLP 20 Church Street 22nd Floor Hartford, CT 06103				
EXAMINER				
TRA, TUYEN Q				
ART UNIT		PAPER NUMBER		
2873				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary

Application No.

10/554,002

Applicant(s)

VELGER ET AL.

Examiner

TUYEN Q. TRA

Art Unit

2873

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-15 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Objections

2. Claims 3 and 4 are objected to because of they depend on the canceled claim 2. They should depend on claim 1 or an appropriate correction is needed. However, for purposes of examination below, it is assumed that claims 3 and 4 should depend upon claim 1.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1 recites the limitation "said geometric waveform" in line 13. There is insufficient antecedent basis for this limitation in the claim.

With assumption that "said geometric waveform" is "a geometric waveform", claim 1 is still unclear because "a geometric waveform" is a result/consequence of an oscillating of an oscillator. The oscillator has unknown input values: "mass", "force" and "stiffness coefficients". The oscillator has an unknown output: "geometric waveform". The claim seems to claim the value of inputs dependent on the value of outputs. Therefore, it is a reverse engineering. An appropriate correction is required.

Claims 5-14 are also rejected because they depend on the rejected claim 1 above.

5. Claim 15 recites the limitation "said geometric waveform" in line 14. There is insufficient antecedent basis for this limitation in the claim.

With assumption that "said geometric waveform" is "a geometric waveform", claim 15 is still unclear because "a geometric waveform" is a result/consequence of an oscillating of the oscillator. The oscillator has unknown value of inputs: "mass", "force" and "stiffness coefficient". The oscillator has an unknown value of output: "geometric waveform". The claim is claiming the value of inputs (i.e. mass, force, stiffness) dependent on the value of output (i.e. geometric waveform); therefore, it seems like a reverse engineering where "mass, force and stiffness coefficients values are selected so that the oscillator oscillates according to said geometric-waveform". The oscillator oscillates according to value of mass, force and stiffness coefficient, it can not oscillate according to a geometric-waveform (because the geometric-waveform is a dependent parameter). An appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 3-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elsner et al. (DE19728598 translation; hereafter Elsner), in view of Frenk (US 4,001,658).

With respect to claim 1, Elsner et al. discloses a plurality of masses (elements 8 and 7 of Figure 1), at least one of said masses comprising a light processing module (element 7 of Figure

1), at least one force producing element (element 9 coupled with element 7 of Figure 1) coupled to at least one of said masses, said at least force producing element applying at least one force to at least one said masses; and a plurality of elastic elements (i.e. spring element 5, element 6, element 20 and element 21 of Figure 1), said elastic elements coupling said masses (elements 8, 9 and 7 of Figure 1) together, said elastic elements (element 5 and 6 of Figure 1) coupling at least one of said masses to at least one support (3 and 4 of Figure 1) wherein the mass values (any predetermined value) of said masses, the force value (any predetermined force value) of said at least one force and the stiffness coefficients (any predetermined stiffness coefficient value) of said elastic elements, are selected such that said light processing module oscillates according to a predetermined (any) waveform (i.e. basic definition given to geometric-waveform)(page 2, lines 50-61). However, Elsner lacks teachings of wherein the said geometric waveform selected from the list consisting of: triangular, non-sinusoidal, and square. Frenk is in field of mechanical oscillator and teaches a symmetrically mass system oscillator for generating non-sinusoidal or triangular movements (see abstract; col. 1, lines 15-20 and col. 3, lines 62-63). It would have been obvious to one having ordinary skill in the art at the time invention was made to incorporate the teachings of Frenk into the device of Elsner invention for purpose of generating symmetrically waveform.

With respect to claims 4 and 5, Elsner further discloses wherein triangular waveform is not symmetric; the light processing module (7) reflects light (because element 7 is a mirror).

With respect to claim 6, Elsner further discloses wherein the light processing module (7) oscillates in an oscillatory motion spatially.

With respect to claim 7, Elsner further discloses wherein the force producing elements (3, 4) is electrostatic element (electrodes).

With respect to claim 8, Elsner further discloses wherein the one force producing element (3, 4) is located the support.

With respect to claim 9, Elsner further discloses wherein each of the masses (8, 9), the force producing element (3, 4), and the elastic elements (20, 21) are incorporated with a micro-electromechanical system (1 of Figure 1).

With respect to claim 10, Elsner further discloses wherein the light processing module (7) is located between respective two of said masses (8 and 9 of Figure 1).

With respect to claim 11, Elsner further discloses wherein a first group of the mass (8) and a second group of the mass (9) are symmetrically located at two sides of the light processing module (7).

With respect to claim 12, Elsner further discloses wherein a selected mass (8) of the first group and a respective mass (9) of said second group, are located at opposite sides of said light processing module (7), said selected mass (8) and respective mass (9) having substantially the same geometric and physical characteristics.

With respect to claim 13, Elsner further discloses wherein the mass (8, 9) and the elastic elements (20, 21) are located between two of the respective the one support.

With respect to claim 14, Elsner further discloses wherein the densities of said masses (8, 9) and said elastic elements (20, 21) are substantially the same.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elsner et al.(DE19728598 translation; hereafter Elsner) in view of Frenk(US 4,001,658) as applied to claim 1 above, and further in view of Hagelin et al.(US 6,947,189).

The teachings of Elsner in view of Frenk are described with reference to claim 1 above. However, neither Elsner nor Frenk discloses wherein the triangular waveform is symmetric. Hagelin is in scanning device field and teaches a triangular waveform is symmetric (Column. 7, lines 1-3). It would have been obvious to someone having ordinary skill in the art at time invention was made to incorporate the teachings of Hagelin into the device of Elsner for purpose of generating symmetric waveform.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elsner et al.(DE19728598 translation; hereafter Elsner), in view of Shahoian et al.(US 7,209,118).

Elsner et al. discloses a plurality of masses (elements 8 and 7 of Figure 1), at least one of said masses comprising a light processing module (element 7 of Figure 1), at least one force producing element (element 9 coupled with element 7 of Figure 1) coupled to at least one of said masses, said at least force producing element applying at least one force to at least one said masses; and a plurality of elastic elements (i.e. spring element 5, element 6, element 20 and element 21 of Figure 1), said elastic elements coupling said masses (elements 8, 9 and 7 of Figure 1) together, said elastic elements (element 5 and 6 of Figure 1) coupling at least one of said masses to at least one support (3 and 4 of Figure 1) wherein the mass values (any predetermined value) of said masses, the force value (any predetermined force value) of said at least one force and the stiffness coefficients (any predetermined stiffness coefficient value) of

said elastic elements, are selected such that said light processing module oscillates according to a predetermined (any) waveform (i.e. basic definition given to geometric-waveform)(page 2, lines 50-61). However, Elsner lacks teachings of wherein at least one damping element coupled with at least one of said at least one masses, at least one of said elastic elements, and with said respective at least one support. Shahoian et al. teaches a coupling between a damping element (damper 210 of Figure 1) and a mass (mass 206 of Figure 1)(col. 10, lines 43-45). It would have been obvious to someone having ordinary skill in the art at the time invention was made to incorporate the teaching of damping element of Shahoian et al. into the device of Elsner for purpose of preventing the masses from over oscillating.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUYEN Q. TRA whose telephone number is (571)272-2343. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky L. Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. Q. T./
Examiner, Art Unit 2873

/Scott J. Sugarman/
Primary Examiner, Art Unit 2873